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By *ADAM FITZ-ADAM.*

To be continued every THURSDAY.

THURSDAY, *Auguſt* the 1ſt, 1754.

To Mr. FITZ-ADAM.

SIR,

WHEN the ſtudies of learned and philoſophical men are employed in extending the commerce and improving the manufactures of their country, they cannot be held in too high a degree of eſtimation by a trading people.

THE perfection at which our home manufactures are arrived, we impute in a great meaſure to the ingenuity of our ordinary handicrafts, to the induſtry of our merchants, and to the honeſty and integrity of our trading companies. But in my humble opinion, if our natural philoſophers had not kindly ſtept in to the aſſiſtance of the ſaid handicrafts and others, our manufactures would ſcarcely have been carried to ſo great a degree of excellence above thoſe of the ancient, as well as of the modern world. For by as much as we are before all other countries in the knowledge of natural philoſophy, by juſt ſo much are all other countries behind Us in the goodneſs of their manufactures.

IT is by the head of the philoſopher that the hand of the mechanic is put in motion: and though the ancients and a few nations of the moderns may have produced ſome good hands, yet their having made ſo mean a figure in trade, muſt be owing to their want of good philoſophical heads.

THE manufactures of glaſs-porcelain and cephalic ſnuff were abſolutely unknown to the ancients; and they had very little knowledge in the making thunder and lightning, which our own countrymen, from the ſagacity of our philoſophers, and the help of electrical experiments, are now able to make in very conſiderable quantities, to the great honour and emolument of theſe kingdoms.

I AM not afraid of aſſerting, that from this manufacture alone (provided it were put under proper regulations, and honoured with a parliamentary encouragement) we might have it in our power to be the moſt potent, the moſt wealthy, and the happieſt people in the whole univerſe. It would enable us to pay off our national debt in ſix months: it would ſecure us from our enemies without the expence either of fleet or army: or we might conquer France, whenever the common people of England ſhould order it to be done, without the aſſiſtance of allies, or paying one penny to the land-tax. Theſe, Mr. Fitz-Adam, I think are conſiderations which deſerve the attention of the public; at leaſt, they are conſiderations which have induced Me to be very particular in my thoughts upon this valuable commodity.

WHEN electrical experiments were firſt exhibited to the curious, I did not hear that the profeſſors propoſed any advantages to mankind, except that with the help of their curious engine, they could give a patient a pretty ſmart blow on the elbow, without the uſe of any other weapon. It is true that a ſmall crab-ſtick might have performed the operation; but then it would have been effected by a method common and vulgar. We were informed, indeed, that the electrical engine had been

been made uſe of in the cure of ſeveral diſtempers; but I do not recollect to have heard that they had any great ſucceſs that way, except that ſome few very mean people were made blind, that three or four necks were diſlocated, and that a child of five years old was frightened into fits. But theſe caſes not being ſufficiently atteſted, and the ſame ſort of cures having been tolerably well performed by many regular bred ſurgeons and apothecaries in this town, I was glad to learn that our philoſophers had confined all their experiments to the manufacture above-mentioned: the proceſs of which is ſo clear and eaſy (all the ingredients being to be found in our own country, and none of them liable to any duty) that I make no doubt of our being able to bring thunder and lightning to market at a much cheaper price than common gunpowder.

I AM informed by a friend, who for theſe laſt five years, has applied himſelf wholly to electrical experiments, that the moſt effectual and eaſy method of making this commodity is by grinding a certain quantity of air between a glaſs ball and a bag of ſand; and when you have ground it into fire, your lightning is made; and then you may either bottle it up, or put it into caſks, properly ſeaſoned for the purpoſe, and ſend it to market. My friend very honeſtly confeſſes that what he has hitherto made is not of a ſufficient degree of ſtrength to anſwer all the purpoſes of natural lightning; but he aſſures me that he ſhall very ſoon be able to effect it, and that he has already brought it to a very ſurpriſing degree of perfection; inſomuch that in the preſence of ſeveral of his neighbours, he has produced a clap of thunder which blew out a candle, accompanied with a flaſh of lightning which made an impreſſion on a pat of butter as it ſtood on the table. He alſo aſſures me that in warm weather he can ſhake all the pewter upon his ſhelf, and that he expects when his thermometer is at ſixty two degrees and a half, he ſhall be able to ſower all the ſmallbeer in his cellar, and break his

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largeſt pier-glaſs. If he accompliſhes the two laſt, he flatters himſelf that it will be ſtrong enough to kill a young child; but he is obliged to defer that experiment till his lady is brought to bed.

If theſe facts are true, which I do not in the leaſt doubt, we may ſoon ſee this manufacture in a very flouriſhing condition. For if from a glaſs ball of one foot and a half diameter, which is the ſize of my friend's, we can produce a ſufficient quantity of lightning to deſtroy a child, it follows that a ball of four times that diameter will kill a man in perfect health and vigour; which muſt be a great advantage to the public, and ſave a conſiderable ſum of money which is yearly given to apothecaries and doctors. And if the wheel, thus encreaſed in it's diameter, encreaſes the power; by encreaſing it ſtill farther you will make lightning enough to ſplit a church ſteeple.

As for example. Suppoſe A, fig. the 1ſt. to be a glaſs ball 4672 feet diameter, turned upon the ſpindle B, being in length 579½ feet, by the handle C, againſt the ſand bag a a a a, which ſuppoſe to be fixed to the ſide of Richmond hill. The quantity of air ground in an hour will be equal to XX, which will produce of pure lightning 1,694,753 tons; the force of which being applied to St. Bride's ſteeple, will make the crack G H, in fig. the 2d. If this ſhould not be intelligible to thoſe who are unacquainted with the mathematics, I will at any time at a day's notice attend and explain it to them.

I can think of but one objection to the erecting the machine above deſcribed, which is the greatneſs of the expence, as being too heavy for any private perſon. But it is to be hoped that ſome public company will undertake it, or that our governors will favour it with their conſideration, and order it to be erected at the public expence. I, who have only the good of my country before me, will moſt readily agree to inſpect the workmen, and ſee that the money ſhall be laid out with the

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ſtricteſt œconomy, without deſiring a ſhilling for my trouble.

But leſt ſome malicious perſons ſhould ſuggeſt that I am writing merely to recommend a job to myſelf, I ſolemnly declare that a full week before I had any thoughts of addreſſing the public by means of your paper, I applied myſelf to a club of Anti-Gallicans, of which I have the honour to be an unworthy member, and propoſed in a ſpeech that our laudable ſociety ſhould take this infant manufacture into their guardianſhip and protection. And as we had lately diſcovered that nothing excites mankind to good and virtuous actions ſo much as honourable pecuniary gratuities it was unanimouſly agreed that the ſociety ſhould order premiums to be given out of their public ſtock, for the encouragement of thoſe who ſhould make experiments for the improvement of this manufacture: and the following advertiſement was ordered to be publiſhed.

Cat and Fiddle Lodge *July* 21ſt. 1754.

Preſent the Vice Grand.

Ordered, *that for the encouragement of the making* thunder *and* lightning, *the following premiums be given by this ſociety, to be paid by their ſecretary within twelve months after the ſame ſhall be reſpectively adjudged to the ſeveral claimants.*

To any perſon or perſons who ſhall on or before Chriſtmaſs day next, by a clap of electrical thunder, *accompanied by a ſufficient quantity of* lightning, *beat down and deſtroy the dome of St. Pauls cathedral,* 20ſ.

To ditto for ditto the Monument on Fiſh-ſtreet hill, 15ſ.

Covent-Garden church, 7ſ. 6d.

Weſtminſter Hall in Term-time, 5ſ.

Weſtminſter-bridge, 2ſ. 6d.

For the firſt man under forty, and the firſt woman with child, killed by the ſaid thunder *and* lightning; *and for the firſt Hay-rick of thirty load and upward, burnt and conſumed,* 1ſ. *each.*

When, from the above encouragement, theſe uſeful works